Agricultural apparatus and methods with superheated steam to fumigate soils and plants, weed soils, defoliate plants and dry fruits in situ

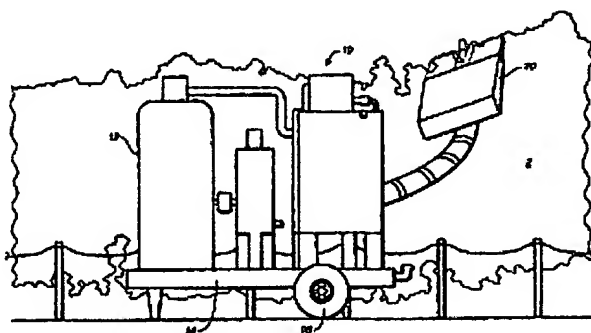|	
Patent number:	NZ335032
Publication date:	2000-12-22
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Applicant:	CLAUDE E BROWN
Classification:	
– international:	A01M13/00; A01M21/00; A23B7/14; A01M21/04; A01N25/18; A01G11/00; A01M19/00; A01M17/00
– european:	
Application number:	NZ19980335032 19980114
Priority number(s):	US19970958073 19971027; WO1998US00793 19980114

Also published as:

- WO9921418 (A1)
- EP0967861 (A1)
- EP0967861 (A4)
- AU754019 (C)

Abstract of NZ335032

An apparatus, useful for agricultural applications, comprises: a) a portable frame; b) a water reservoir mounted on the frame which defines an upstream end of a fluid passageway carried by the frame; c) a first chamber disposed along the fluid passageway downstream of the reservoir which includes a heater operable to convert water flowed from the reservoir and through the chamber into steam; d) a second chamber disposed along the fluid passageway which is constructed to be sufficient to receive steam at a first temperature range downstream of the first chamber and to heat the received steam to a second temperature range, wherein the steam at the second temperature range is superheated ; e) a steam separator disposed along the fluid pathway and being between the first and second chambers which is able of separating liquid from the steam flowing in the passageway and f) an outlet adapted to deliver a flow of superheated steam from the second chamber. Methods for treating plants and fields in agricultural applications using the above apparatus to selectively deliver superheated steam to adjacent to grape vine leaves in order to defoliate basal leaves and to kill localized insect pests or injecting superheated steam in strawberry beds prior to planting to kill nematodes are disclosed. The superheated steam is delivered at temperatures in excess of about 300oF.

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